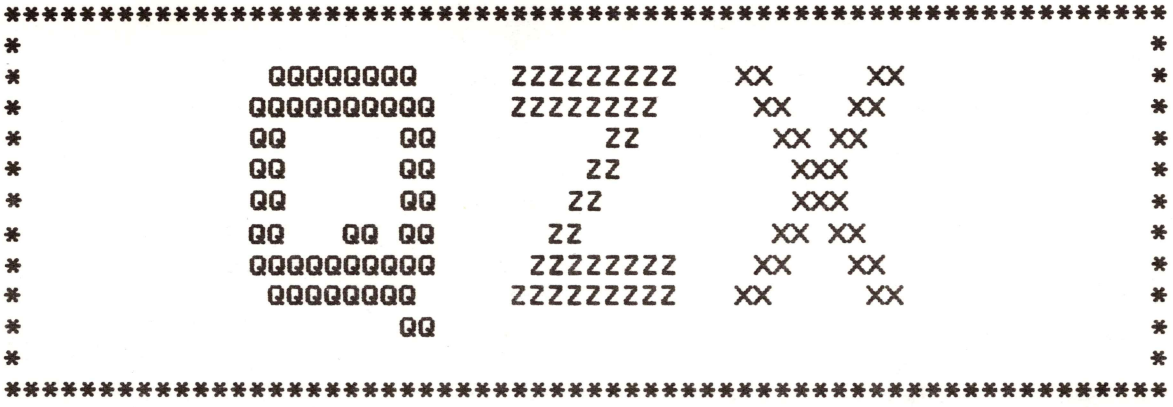
QQQQQQQQ ZZZZZZZZZ XX XX
QQQQQQQQQQ ZZZZZZZZ XX XX
QQ QQ ZZ XX XX
QQ QQ ZZ XXX
QQ QQ ZZ XXX
QQ QQ QQ ZZ XX XX
QQQQQQQQQQ ZZZZZZZZ XX XX
QQQQQQQQ ZZZZZZZZZ XX XX
QQ

The Journal Covering Amateur Radio & Sinclair Computers
ZX-80; Micro Ace; ZX-81; T/S 1000, 1500, & 2068
2025 O'Donnell Drive
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88001

Alex F. Burr,K5XY
Publisher

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Editor

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Volume 2 Number 1 ($1.50/issue) Dec 1983

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N O T I C E

Your mailing label now includes the expiration date of your QZX subscription. For example, the 152 charter subscribers labels say 11/83, which means it expired last month, and we are sending you this (FINAL) extra issue in hopes of getting your renewal immediately! We need and appreciate your continued support. The January issue is AT THE PRINTERS, so don't delay.

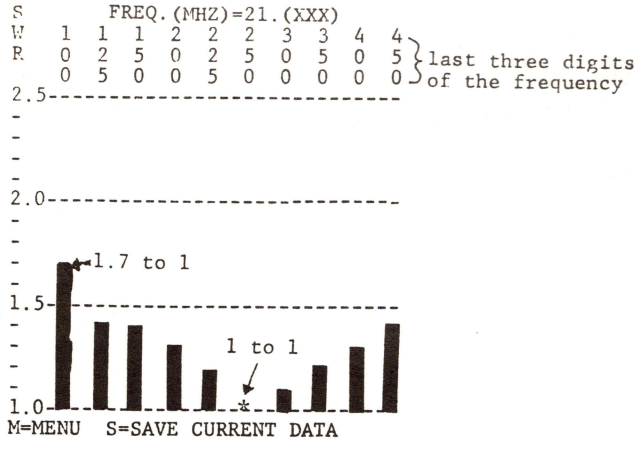
If you received a postcard concerning payment for QZX articles, PLEASE send it in ASAP, no one gets paid until they are ALL back!

K5MIL SWR PLOT

SWR PLOT allows you to enter up to 10 frequencies and their corresponding forward and reverse power readings. The program will then calculate and plot the SWR for each frequency on a bar graph. The program will plot on one of two graphs according to the highest SWR calculated. If the highest SWR calculated is over 2.5 to 1, the plot will be on a graph which reads up to 4 to 1. If any calculation is over 4 to 1 the plot line will extend to the 4 to 1 line and then print a plus (+) to indicate that the SWR is over 4 to 1. If the highest SWR calculated is 2.5 to 1 or less then the plot will be on a graph which reads up to 2.5 to 1. Using two graphs allows lower SWR calculations to be displayed on a larger scale. A 1 to 1 SWR is indicated by an asterisk (*) printed on the 1.0 to 1 line.

To use the program, type LOAD"SWR" or LOAD"". After loading, a menu screen will be displayed that gives you two choices. 1. DISPLAY PREVIOUS GRAPH and 2. PLOT NEW GRAPH. Display previous graph will display the data from the last graph that was saved. If no previous data was saved you will get a message "no previous data available". Plot new graph will prompt you for the frequencies and power readings to be used to plot a new SWR graph. You will be asked to enter frequency no. 1. Respond by entering a frequency such as 21.100. The program will next ask for a forward power reading, and then a reverse power reading. You do not have to enter all ten entries. The program will plot and display at any point after the first entry if Enter (without data) is pressed in response to "enter frequency no."

After the graph is displayed, you may then enter an M to return to the menu or an S to save the data just plotted. If you save the current data, you may then redisplay the graph at any time by selecting option 1 on the menu. You may also save the data and program to tape after saveing the current data by selecting option S again. Option 2 on the menu will have no effect on the saved data unless you do another save data.


S FREQ.(MHZ)=21.(XXX)
W 1 1 1 2 2 2 3 3 4 4
R 0 2 5 0 2 5 0 5 0 5
0 5 0 0 5 0 0 0 0 0
last three digits of the frequency
2.5
2.0
1.7 to 1
1.5
1 to 1
1.0
M=MENU S=SAVE CURRENT DATA

```
 10 REM K5MIL SWR PROGRAM
 20 DIM B$(10,6)
 30 DIM E(10)
 40 DIM F$(10,6)
 50 DIM C(10)
 60 CLS
100 PRINT AT 6,0;"******************************"
110 PRINT "* THIS PROGRAM CALCULATES SWR *"
112 PRINT "*  UP TO 10 FREQUENCIES, THEN *"
114 PRINT "*  PLOTS SWR ON A BAR GRAPH   *"
116 PRINT "******************************"
120 PRINT AT 12,4;"1. DISPLAY PREVIOUS GRAPH ";AT 14,4;"2. PLOT N
EW GRAPH          "
130 PRINT AT 21,0;"SELECT 1 OR 2"
140 IF INKEY$="1" THEN GOTO 790
150 IF INKEY$="2" THEN GOTO 870
160 GOTO 130
170 CLS
180 FOR N=1 TO 10
190 PRINT AT 12,3;"ENTER FREQ. NO. ";N;" (XX.XXX)    "
200 INPUT F$(N)
210 LET A=CODE F$(N)
215 IF N=1 AND A=0 THEN GOTO 170
220 IF A=0 THEN GOTO 310
230 CLS
240 PRINT AT 12,3;"ENTER FORWARD POWER READING"
250 INPUT A
260 PRINT AT 12,3;"ENTER REVERSE POWER READING"
270 INPUT B
280 LET C(N)=INT ((A+B)/(A-B)*10+.5)/10
290 PRINT AT 13,3;"OR PRESS ENTER TO PLOT SWR"
300 NEXT N
310 LET D=N-1
320 CLS
322 GOTO 2000
330 FOR N=5 TO 20
340 PRINT AT N,0;"-"
350 IF N=5 OR N=10 OR N=15 OR N=20 THEN PRINT AT N,0;"----------
----------"
360 NEXT N
370 PRINT AT 5,0;R$;AT 10,0;S$;AT 15,0;T$;AT 20,0;U$
390 PRINT AT 1,0;"S"
400 PRINT AT 2,0;"W"   <- underlining indicates
410 PRINT AT 3,0;"R"      inverse chars.
420 PRINT AT 0,5;"FREQUENCY (MHZ)="
430 GOTO 980
440 LET X=1
450 LET Y=3
460 FOR N=1 TO D
470 PRINT AT X,Y;F$(N,Z)
480 LET Y=Y+3
490 NEXT N
500 LET X=X+1
510 LET Z=Z+1
520 IF Z>6 THEN GOTO 540
530 GOTO 450
540 FOR A=1 TO D
560 IF C(A)=1 THEN GOTO 670
570 IF V=1 THEN LET C=(((C(A)-1)/.1)*2)+2
```

```
575 IF V=0 THEN LET C=((C(A)-1)/.1)+2
578 FOR P=3 TO C
579 IF P>32 THEN GOTO 682
580 PLOT A*6+1,P
610 NEXT P
625 NEXT A
630 PRINT AT 21,0;"C=COPY M=MENU  S=SAVE GRAPH"
640 IF INKEY$="M" THEN GOTO 930
650 IF INKEY$="S" THEN GOTO 690
655 IF INKEY$="C" THEN COPY
660 GOTO 640
670 PRINT AT 20,A*3;"*"
680 GOTO 620
682 PRINT AT 5,A*3;"+"
684 GOTO 625
690 PRINT AT 21,0;"                                (32 spaces)
700 FOR N=1 TO 10
710 LET B$(N)=F$(N)
720 LET E(N)=C(N)
730 NEXT N
732 PRINT AT 21,0;"GRAPH SAVED"
734 FOR N=1 TO 30
735 NEXT N
736 PRINT AT 21,0;"C=COPY M=MENU  S=SAVE TO TAPE"
738 IF INKEY$="M" THEN GOTO 930
740 IF INKEY$="S" THEN GOTO 744
741 IF INKEY$="C" THEN COPY
742 GOTO 738
744 CLS
745 PRINT AT 12,4;"PUT RECORDER IN RECORD MODE";AT 14,4;"THEN PRE
SS ENTER"
750 IF INKEY$="" THEN GOTO 750
760 SAVE "SWR"
770 SLOW
780 GOTO 60
790 CLS
800 IF E(1)=0 THEN GOTO 950
810 FOR N=1 TO 10
820 IF E(N)=0 THEN GOTO 310
830 LET F$(N)=B$(N)
840 LET C(N)=E(N)
850 NEXT N
860 GOTO 310
870 CLS
880 FOR N=1 TO 10
890 LET F$(N)=""
900 LET C(N)=0
910 NEXT N
920 GOTO 170
930 CLS
940 GOTO 60
950 PRINT AT 12,4;"NO PREVIOUS DATA AVAILABLE";AT 14,4;"PRESS ENT
ER"
960 IF INKEY$="" THEN GOTO 960
970 GOTO 60
980 LET Q=1
990 LET Z=1
1000 LET Y=20
1010 LET FF=CODE F$(Q,Z)+128
1020 PRINT AT 0,Y;CHR$ FF
1040 LET Z=Z+1
1050 LET Y=Y+1
1060 IF F$(Q,Z)="." THEN GOTO 1080
1070 GOTO 1010
1080 PRINT AT 0,Y;".XXX" ←inverse chars.
1090 LET Q=1
1100 LET Z=1
1110 IF F$(Q,Z)="." THEN GOTO 1150
1130 LET Z=Z+1
1140 GOTO 1110
1150 LET Z=Z+1
1160 GOTO 440
2000 LET Q=0
2010 FOR N=1 TO 10
2020 IF C(N)>Q THEN LET Q=C(N)
2030 NEXT N
2040 IF Q<=2.5 THEN GOTO 2120
2045 LET V=0
2050 LET R$="4.0"
2060 LET S$="3.0"
2070 LET T$="2.0"
2080 LET U$="1.0"
2110 GOTO 330
2120 LET V=1
2125 LET R$="2.5"
2130 LET S$="2.0"
2140 LET T$="1.5"
2150 LET U$="1.0"
2190 GOTO 330
```

QZX NET INFO

FREQ	TIME	DAY	SOURCE	LOCATION
3.600	1930	WED	G4INP	EUROPE
3.980	0100	SAT	N3CJP	EAST COAST
4.020	0000	WED	WB5HVS	LA (MARS)
7.228	1900	SAT	K4KEP	EAST COAST
7.228	1900	SUN	K4KEP	EAST COAST
7.235	1700	SAT	W6AMW	WEST COAST
7.240	1600	SUN	KQ2F	EAST COAST
7.245	0001	WED	W9CQD	USA
14.150	1900	THU	G4INP	EUROPE
14.200	1000	SAT	G4INP	EUROPE
14.200	1400	SAT	G4INP	EUROPE
14.200	1000	SUN	G4INP	EUROPE
14.329	2000	SUN	W9CQD	USA
14.345	0100	THU	NU4V	USA
146.04	0100	THU	KB3YT	PITTSBURGH
146.16	0000	THU	N1CB	VERMONT/NH
146.67	0230	TUE	K5XY	MANHATTEN,NY
147.84	0000	WED	WB5HVS	NEW ORLEANS

INSTRUCTIONS

*** KA5LHO HAM HELPER SERIES ***

BY

KRAIG D. PRITTS
KA5LHO

-09 USACA (16K)

LOAD USACA. THE PROGRAM IS SELF-STARTING AND A MENU WILL APPEAR UPON SUCCESSFUL LOADING. IN OPTION 4 YOU WILL SEE THE TWO LETTER ABBREVIATION FOR THE STATE THAT IS IN MEMORY. MENU OPTIONS INCLUDE:

1) START A NEW LIST-COMPLETELY CLEARS MEMORY OF ALL DATA INCLUDING COUNTY AND STATE. BE POSITIVE BEFORE MAKING THIS CHOICE.

2) SEARCH FOR A COUNTY-ALLOWS A SEARCH FOR ANY COUNTY IN THE STATE. USE OF THIS OPTION ALLOWS YOU TO MAKE ANY DATA CHANGES YOU DESIRE.

3) DISPLAY TOTALS-GIVES THE TOTAL FIGURES FOR EACH DATA AREA AS FOLLOWS: COUNTIES IN THE STATE, COUNTIES WORKED, CONFIRMATIONS, MOBILE CONTACTS, AND FIXED CONTACTS.

4) GET A PRINTOUT OF ALL COUNTIES WORKED-WHEN USED WITH A PRINTER, THIS OPTION WILL GIVE A COMPLETE PRINTOUT OF EACH COUNTY IN THE STATE THAT HAS BEEN WORKED ALONG WITH ALL DATA.

5) EXIT THE PROGRAM-AND SAVE TO TAPE IF DESIRED.

THE PROGRAM IS SELF-PROMPTING THROUGHOUT AND SHOULD PRESENT NO PROBLEMS FOR THE USER. IF THE PROGRAM SHOULD SUFFER A BREAK AT ANY TIME, DO NOT USE RUN. INSTEAD USE GOTO 1 FOR A RESTART.

IN THE SEARCH MODE THERE IS ONE IMPORTANT NOTE. IN A CASE WHERE A COUNTY NAME CONSISTS OF THE FIRST OF TWO WORDS BEING SAINT (I.E. ST. JAMES, SAINT CHARLES, ETC.) IT IS LISTED AS ST WITH NO PERIOD AND A SINGLE SPACE SEPARATING THE WORDS. ANY OTHER FORM OF ENTRY WILL RESULT IN NO COUNTY BEING FOUND.

WHEN USED WITH A PRINTER THIS SERIES OF PROGRAMS IS A TREMENDOUS TIME SAVER WHEN APPLYING FOR VARIOUS COUNTY AWARDS. I HOPE THAT YOU WILL FIND IT AS USEFUL AS I HAVE.

73,

KRAIG D. PRITTS

SAMPLE SCREENS

MENU

MENU

1. START A NEW LIST
2. SEARCH FOR A COUNTY (INCLUDING CHANGE OPTION)
3. DISPLAY TOTALS
4. GET A PRINTOUT OF ALL IL COUNTIES WORKED
5. EXIT THE PROGRAM

SEARCH AND CHANGE

COUNTY: MACON
STATE: IL
CALL: W9ET
LOCATION: IMC
STATUS:

DO YOU WISH TO CHANGE ANY DATA?

SAMPLE PRINTOUT

IL COUNTY	CALL	M/F	W/C
CHAMPAIGN	N9CKN	M	C
CLAY	N9CLZ	M	C
COOK	N9CHU	M	C
CUMBERLAND	K4VUD	M	C
DE KALB	WB9DLX	M	C
DOUGLAS	W9ET	M	C
DU PAGE	N9CHU	M	C
EDWARDS	N9CLZ	M	C
FAYETTE	N9CHU	M	C

STATE TOTAL

DATA REPORT ON IL COUNTIES

COUNTIES LISTED:	102
COUNTIES WORKED:	35
COUNTIES CONFIRMED:	33
FIXED CONTACTS:	8
MOBILE CONTACTS:	27

INVERSE CHARACTERS IN LISTING

*** INVERSE CHARACTERS ***

LINE	INVERSE CHARACTERS (@=INVERSE SPACE)
48,8080, 8170,7020	ENTER
110	(22 ASTERISKS);"@@@@UNITED@@STATES@@@@@";"@COUNTY@HUNTERS@AWARD@";"@@@@@@@@PROGRAM@@@@@@@"; (22 ASTERISKS)
1087	$ENTRY$MODE$
2015	$SEARCH$AND$CHANGE$MODE$
6015	$EXIT$PROGRAM$
6030	S
6040	R
6042	D

USA-CA PROGRAM, KA5LHO
(HEADING TWO PAGES FORWARD)

DISCOUNT FOR QZXERS

HAMG WILD Software, Box 7668, Little Rock, AR 72217, has announced that they will give a 10% discount to all QZX subscribers. This discount applies to software only, it may not be used with other discounts, and it does not apply to excepted specials. To get the discount mention that you are a QZX subscriber and enclose your expiration date with your order. For more information on some of their software programs see the reviews in this issue.

LISTING

```
  1 REM "USACA"
 10 GOTO 100
 20 IF LEN C$=1 THEN LET C$=C$+
"
 21 IF LEN C$=2 THEN LET C$=C$+
"
 22 IF LEN C$=3 THEN LET C$=C$+
"
 23 IF LEN C$=4 THEN LET C$=C$+
"
 24 IF LEN C$=5 THEN LET C$=C$+
"
 25 IF LEN C$=6 THEN LET C$=C$+
"
 26 IF LEN C$=7 THEN LET C$=C$+
"
 27 IF LEN C$=8 THEN LET C$=C$+
"
 28 IF LEN C$=9 THEN LET C$=C$+
"
 29 IF LEN C$=10 THEN LET C$=C$
+"
 30 IF LEN C$=11 THEN LET C$=C$
+"
 31 IF LEN C$=12 THEN LET C$=C$
+"
 32 IF LEN C$=13 THEN LET C$=C$
+"
 33 IF LEN C$=14 THEN LET C$=C$
+"
 35 RETURN
 40 GOTO 100
 42 PRINT "(PRESS ENTER IF NO I
NPUT)"
 43 RETURN
 50 FOR E=13 TO 25 STEP 2
 60 PRINT AT 21,4;"STAND-BY";AT
 21,E;"."
 70 NEXT E
 80 RETURN
 85 PRINT AT 20,0;"DO YOU WISH
ANOTHER CHANGE?"
 90 INPUT E$
 92 IF E$="Y" THEN RETURN
 95 IF E$="N" THEN GOTO 100
100 REM **MENU
105 CLS
110 PRINT AT 1,4;"[illegible]
[illegible]";AT 2,4;"[illegible]
[illegible]";AT 3,4;"[illegible]
[illegible]";AT 4,4;"[illegible]
[illegible]";AT 5,4;"[illegible]
[illegible]"
120 PRINT AT 7,13;"MENU";AT 9,3
;"1. START A NEW LIST";AT 10,3;"
2. SEARCH FOR A COUNTY";AT 11,3;
"   (INCLUDING CHANGE OPTION)"
122 PRINT AT 12,3;"3. DISPLAY T
OTALS"
123 PRINT AT 13,3;"4. GET A PRI
NTOUT OF ALL",TAB 6;A$(1,16 TO 1
7);" COUNTIES WORKED"
125 PRINT AT 15,3;"5. EXIT THE
PROGRAM"
130 PRINT AT 20,0;"ENTER YOUR C
HOICE 1-5."
140 LET K$=INKEY$
150 IF K$="" THEN GOTO 140
155 IF K$="1" THEN GOTO 1000
160 IF K$="2" THEN GOTO 2000
170 IF K$="3" THEN GOTO 3000
180 IF K$="4" THEN GOTO 4000
200 IF K$="5" THEN GOTO 6000
210 GOTO 140
1000 REM **NEW LIST
1010 CLS
1020 PRINT AT 11,9;"ARE YOU SURE
?"
1030 INPUT E$
1040 GOSUB 92
1055 CLS
1060 PRINT AT 11,4;"HOW MANY ENT
RIES?"
1070 INPUT B
1075 DIM A$(B,25)
1080 FOR C=1 TO B
1085 CLS
1087 PRINT AT 1,3;"ENTER NAME"
1090 PRINT AT 5,0;"COUNTY? "
1100 INPUT A$(C,1 TO 15)
1105 PRINT AT 5,16;A$(C,1 TO 15)
1110 PRINT AT 6,0;"STATE? "
1120 INPUT A$(C,16 TO 17)
1125 PRINT AT 6,16;A$(C,16 TO 17
)
1130 PRINT AT 7,0;"CALL(IF WORKE
D)? "
1135 GOSUB 42
1140 INPUT A$(C,18 TO 23)
1142 PRINT AT 8,0;"
"
1145 PRINT AT 7,16;A$(C,18 TO 23
)
1150 PRINT AT 8,0;"(M)OBILE OR (
F)IXED? "
1155 GOSUB 42
1160 INPUT A$(C,24)
1162 PRINT AT 9,0;"
"
1165 PRINT AT 9,16;A$(C,24)
1170 PRINT AT 10,0;"(W)ORKED OR
(C)ONFIRMED? "
1175 GOSUB 42
1180 INPUT A$(C,25)
1182 PRINT AT 11,0;"
"
1185 PRINT AT 11,16;A$(C,25)
1190 NEXT C
1200 GOTO 100
2000 REM **SEARCH/CHANGE
2010 CLS
2015 PRINT AT 1,3;"SEARCH AND/O
R CHANGE MODE"
2020 PRINT AT 3,0;"ENTER THE NAM
E OF THE COUNTY","FOR WHICH YOU
ARE SEARCHING."
2030 INPUT C$
2032 GOSUB 20
2035 FAST
2040 FOR C=1 TO B
2050 IF A$(C,1 TO 15)=C$ THEN GO
TO 2500
2060 NEXT C
2070 PRINT
2075 PRINT "SORRY-THAT COUNTY IS
 NOT LISTED"
2080 PRINT AT 20,0;"PRESS ENTER
TO RETURN TO MENU."
2085 SLOW
2090 INPUT B$
2100 GOTO 100
2500 PRINT AT 3,0;"
"
2502 PRINT AT 4,0;"
"
2505 PRINT AT 3,0;"COUNTY:",A$(C
,1 TO 15)
2512 PRINT "STATE:",A$(C,16 TO 1
7)
2514 PRINT "CALL:",A$(C,18 TO 23
)
2516 PRINT "LOCATION:",A$(C,24)
2518 PRINT "STATUS:",A$(C,25)
2519 SLOW
2520 PRINT AT 13,0;"DO YOU WISH
TO CHANGE ANY DATA? "
2532 PRINT AT 14,0;"
"
2534 PRINT AT 20,0;"
"
2540 LET B$=INKEY$
2550 IF B$="" THEN GOTO 2540
2555 IF B$="Y" THEN GOTO 2750
2560 IF B$="N" THEN GOTO 2080
2565 GOTO 2540
2750 PRINT AT 13,0;"DO YOU WISH
TO CHANGE:          ";AT 14,4;"1)
 CALL";AT 15,4;"2) LOCATION (MOB
ILE/FIXED)";AT 16,4;"3) STATUS
WORKED/CONFIRMED)"
2760 PRINT AT 18,0;"ENTER YOUR C
HOICE 1-3."
2765 LET K$=INKEY$
2770 IF K$="1" THEN GOTO 2800
2775 IF K$="" THEN GOTO 2765
2780 IF K$="2" THEN GOTO 2850
2790 IF K$="3" THEN GOTO 2900
2795 GOTO 2765
2800 PRINT AT 13,0;"YOU WISH TO
CHANGE THE CALL FROM";A$(C,18 TO
 23);" TO: (ENTER A NEW CALL)"
2802 PRINT AT 15,0;"
"
2803 PRINT AT 16,0;"
"
2804 PRINT AT 18,0;"
"
2805 INPUT D$
2810 PRINT AT 14,9;" ";D$;"
"
2815 LET A$(C,18 TO 23)=D$
2825 GOSUB 85
2830 GOTO 2505
2850 PRINT AT 13,0;"YOU WISH TO
CHANGE THE LOCATION","FROM ";A$(
C,24);" TO: (ENTER NEW LOCATION)
"
2852 PRINT AT 15,0;"
"
2853 PRINT AT 16,0;"
"
2854 PRINT AT 18,0;"
"
2855 INPUT D$
2860 PRINT AT 14,9;" ";D$;"
"
2865 LET A$(C,24)=D$
2870 GOSUB 85
2875 GOTO 2505
2900 PRINT AT 13,0;"YOU WISH TO
CHANGE THE STATUS","FROM ";A$(C,
25);" TO: (ENTER NEW STATUS)"
2902 PRINT AT 15,0;"
"
2903 PRINT AT 16,0;"
"
2904 PRINT AT 18,0;"
"
2905 INPUT D$
2910 PRINT AT 14,9;" ";D$;"
"
2915 LET A$(C,25)=D$
2920 GOSUB 85
2925 GOTO 2505
3000 REM **TOTALS
3005 CLS
3007 FAST
3010 LET F=0
3015 LET G=0
3020 LET H=0
3025 LET I=0
3030 LET J=0
3040 FOR C=1 TO B
3050 IF A$(C,1)<>" " THEN LET F=
F+1
3060 IF A$(C,24)="F" THEN LET G=
G+1
3070 IF A$(C,24)="M" THEN LET H=
H+1
3080 IF A$(C,18)<>" " THEN LET I
=I+1
3090 IF A$(C,25)="C" THEN LET J=
J+1
3100 NEXT C
3105 PRINT AT 1,0;"**DATA REPORT
 ON ";A$(1,16 TO 17);" COUNTIES*
*"
3110 PRINT
3120 PRINT TAB 2;"COUNTIES LISTE
D:";TAB 25;F
3125 PRINT
3130 PRINT TAB 2;"COUNTIES WORKE
D:";TAB 25;I
3135 PRINT
3140 PRINT TAB 2;"COUNTIES CONFI
RMED:";TAB 25;J
3145 PRINT
3150 PRINT TAB 2;"FIXED CONTACTS
:";TAB 25;G
3155 PRINT
3160 PRINT TAB 2;"MOBILE CONTACT
S:";TAB 25;H
3165 PRINT
3170 PRINT AT 20,0;"PRESS ENTER
TO RETURN."
3175 SLOW
3180 INPUT B$
3190 GOTO 100
4000 REM **PRINTOUT
4010 CLS
4012 LPRINT A$(1,16 TO 17);" COU
NTY","CALL  ";" M/F ";" W/C"
4015 LPRINT "------------------
---+-----------"
4020 FOR C=1 TO B
4025 IF A$(C,18)=" " THEN GOTO 4
050
4030 IF A$(C,18)<>" " THEN LPRIN
T A$(C,1 TO 15),A$(C,18 TO 23);"
  ";A$(C,24);"     ";A$(C,25)
4040 LPRINT
4050 NEXT C
4060 GOTO 3000
6000 REM **EXIT
6010 CLS
6015 PRINT AT 1,6;"EXIT PROGRAM
"
6020 PRINT AT 3,0;"IF YOU HAVE E
NTERED NEW DATA OR","CHANGED ANY
 DATA, THIS PROGRAM","MUST BE SA
VED TO TAPE."
6030 PRINT AT 7,0;"IF YOU WISH T
O SAVE THE PROGRAM","AND DATA TH
EN ENTER S.  "
6040 PRINT AT 10,0;"IF YOU WISH
TO RETURN TO THE","MENU WITHOUT
ANY DATA LOSS","ENTER S."
6042 PRINT AT 14,0;"IF YOU WISH
SIMPLY TO EXIT THE","PROGRAM, PR
ESS S."
6050 PRINT AT 18,0;"ENTER YOUR C
OMMAND."
6060 LET F$=INKEY$
6070 IF F$="" THEN GOTO 6060
6080 IF F$="S" THEN GOTO 7000
6100 IF F$="S" THEN STOP
6110 IF F$="R" THEN GOTO 100
6120 GOTO 6060
7000 REM **SAVE
7010 CLS
7020 PRINT AT 10,10;"START TAPE"
;AT 12,10;"PRESS ENTER"
7030 INPUT B$
7040 SAVE "USACB"
7050 GOTO 100
9997 REM **MEMORY CHECK
9998 STOP
9999 PRINT AT 11,13;PEEK 16404+2
56*PEEK 16405-16384
```

USA-CA Program

Kraig Pritts, KA2LHO

THIS IS ANOTHER PROGRAM IN THE KA2LHO HAM HELPER SERIES DESIGNED TO PUT THE SINCLAIR COMPUTERS TO WORK IN THE HAM SHACK. TWO OTHERS WERE PRINTED IN PREVIOUS ISSUES OF QZX AND MORE WILL BE COMING IN THE FUTURE (THERE ARE 15 PROGRAMS IN THE SERIES AT PRESENT).

THIS IS ENTITLED "USACA" FOR THE AWARD PROGRAM SPONSORED BY CQ MAGAZINE. THE PROGRAM PROVIDES ACCESS TO LOG INFORMATION FOR EACH COUNTY IN A PARTICULAR STATE, INCLUDING COUNTY, STATE, CALL, FIXED/MOBILE STATUS, AND WORKED/CONFIRMED STATUS. DUE TO MEMORY LIMITATIONS ONLY ONE STATE MAY BE LOADED AT A TIME BUT ALL COUNTIES WITHIN THAT STATE ARE AVAILABLE.

WHAT FOLLOWS ARE THE INSTRUCTIONS WHICH ARE INCLUDED WITH EACH ORDER OF "USACA" THAT IS PLACED FOR CASSETTE COPIES. IN ADDITION TO THIS INFORMATION A FEW ADDITIONAL NOTES ARE IN ORDER FOR THOSE TYPING THE PROGRAM IN FROM SCRATCH.

AFTER TYPING IN THE LISTING, YOU MUST USE OPTION 1 (DESCRIBED LATER) AND ENTER EACH COUNTY FOR A STATE. ONCE THIS IS DONE THE PROGRAM IS A REAL TIME SAVER AND ALSO SAVES WRITERS CRAMP. IF YOU ARE AN AWARD CHASER, YOU NEED ONLY TO LOAD A PARTICULAR STATE, PRESS A FEW BUTTONS AND YOU WILL GET A COMPLETE PRINTOUT OF EACH COUNTY WORKED IN THAT STATE ALONG WITH ALL STORED DATA THAT HAS BEEN ENTERED. IF YOU WISH TO STORE ADDITIONAL INFO OR USE A DIFFERENT FORMAT, THE CHANGES CAN BE MADE DURING THE ORIGINAL TYPING OF THE PROGRAM.

THE ONLY REAL DRAWBACK TO "USACA" IS THE INITIAL TIME SPENT IN GETTING THE COUNTIES INTO THE PROGRAM INITIALLY. FOR THOSE WHO FEEL THAT THE TIME IS NOT AVAILABLE FOR THIS OR FOR TYPING "USACA" INTO THEIR MACHINES, THERE ARE TWO OPTIONS WHICH I PROVIDE TO SAVE YOU SOME TIME. I CAN PROVIDE "USACA" ON A CASSETTE ON AN INDIVIDUAL STATE BASIS FOR $8.00 PER STATE. THIS INCLUDES INSTRUCTIONS, A LISTING AND A VERIFIED CASSETTE WITH TWO COPIES OF THE PROGRAM. THE OTHER OPTION IS A COMPLETE SET OF FIFTY PROGRAMS (ONE FOR EACH STATE) INCLUDING ALL 3,076 COUNTIES IN THE U.S. ON THREE CASSETTES FOR $40.00. THIS INCLUDES INSTRUCTIONS, A LISTING, AND ALL COUNTIES ALREADY ENTERED INTO MEMORY.

ALL INQUIRIES, REQUESTS, OR IMPROVEMENTS TO "USACA" SHOULD BE SENT TO: KRAIG D. PRITTS, BOX 198, LEONARDSVILLE, NY 13364. I HOPE THAT YOU FIND THIS PROGRAM USEFUL IN YOUR AWARD CHASING.

QSL-II Program

Kraig Pritts, KA2LHO

"QSL II" IS ONE OF A SERIES OF PROGRAMS COMPRISING THE KA2LHO HAM HELPER SERIES. THE PROGRAMS WERE DESIGNED TO PUT THE TIMEX/SINCLAIR FAMILY OF COMPUTERS TO WORK IN THE HAM SHACK AND THEY SERVE A VARIETY OF PURPOSES FROM DATA FILES TO QSL PRINTING. FOR MORE INFORMATION ON THE COMPLETE SERIES SEE PAST ISSUES OF QZX OR SEND A BUSINESS SIZE S.A.S.E. TO THE ADDRESS FOUND LATER IN THIS ARTICLE.

"QSL II" IS A PROGRAM ON THE ORDER OF MY EARLIER "QSL" PROGRAM (SEE JULY/AUGUST ISSUE OF QZX). YOUR CALLSIGN IS GENERATED IN LARGE LETTERS BY THE COMPUTER THUS ELIMINATING THE TASK OF CONSTRUCTING IT THROUGH THE USE OF GRAPHICS CHARACTERS. THE CALL IS DISPLAYED HORIZONTALLY ACROSS THE TOP OF THE SCREEN AND BECAUSE OF THIS DISPLAY FORMAT IS USABLE WITH ALL SIZES OF CALL SIGNS. THE PROGRAM WILL RUN IN EITHER 2K OR 16K RAM BUT FASTER AND EASIER EDITING IS AVAILABLE WITH THE EXPANDED MEMORY.

ALL DETAILS FOR RUNNING THIS PROGRAM ARE FOUND IN THE INSTRUCTIONS WHICH ARE INCLUDED WITH EVERY ORDER RECEIVED FOR THE PROGRAM. A COPY OF THESE INSTRUCTIONS IS INCLUDED HERE TO ASSIST IN THE USE OF "QSL II" AS PRESENTED. IF ANYONE FEELS THEY DO NOT HAVE THE TIME TO TYPE IN THIS PROGRAM, I WILL MAKE IT AVAILABLE ON CASSETTE FOR THE PRICE OF $5.00. THIS INCLUDES TWO COPIES OF THE PROGRAM ON TAPE, INSTRUCTIONS, AND A LISTING.

ALL INQUIRIES AND/OR ORDERS FOR "QSL II" OR ANY OTHER PROGRAMS IN THE KA2LHO HAM HELPER SERIES SHOULD BE DIRECTED TO: KRAIG D. PRITTS-KA2LHO, BOX 198, LEONARDSVILLE, NY 13364.

THE NEW TS1500 ROM

by Dave Wood

The ROM in the new TS1500 is slightly different from that in the old TS100. Sixty-one bytes have been changed at the following hex addresses: 0002-0004; 0006; 0362; 03C6-0401; 16BC; 18D0.

The changes introduced are

1) Different power-up initialization.
2) Fix of the reknowned LPRINT bug (see May-June newsletters)
3) Fix of an obscure bug in the least significant bit in division (see last month)

LISTING FOR "QSL II"

```
   2 LET B$="."
   3 LET C$="==================
=============="
   5 LET A=0
  10 LET B=2
  15 LET C=5
  20 LET D=7
  25 LET E=8
  30 LET F=21
  35 LET G=43
  40 LET H=50
  45 GOTO 1000
  50 INPUT A$
  55 PRINT A$
  60 RETURN
1000 FAST
1005 DIM Z$(E)
1010 LET Z$=" KA2LHO"
1015 FOR Y=G TO 33 STEP -1
1020 FOR X=A TO D
1025 LET S=G-Y
1030 LET N=X+E*INT (S/E)
1035 LET SCAN=S-E*INT (S/E)
1040 IF Y=35 THEN GOTO 1090
1045 LET P=PEEK (7680+E*CODE Z$(
N+1)+SCAN)
1050 FOR I=D TO A STEP -1
1055 IF P(B*I THEN GOTO 1070
1060 LET P=P-B*I
1065 PLOT E*X+D-I,Y
1070 NEXT I
1075 NEXT X
1080 NEXT Y
1090 SLOW
2000 PRINT AT F,A;B$
2005 PRINT AT 5,A;C$
2010 PRINT AT C,E;"TO RADIO-";
2015 GOSUB H
2020 PRINT
2025 PRINT "DATE-";
2030 GOSUB H
2035 PRINT ,"TIME-";
2040 GOSUB H
2050 PRINT "BAND-";
2055 GOSUB H
2060 PRINT ,"MODE-";
2065 GOSUB H
2075 PRINT "RS(T)-";
2080 GOSUB H
2085 PRINT ,"WATTS-";
2090 GOSUB H
2100 PRINT "RIG-";
2105 GOSUB H
2110 PRINT ,"ANT-";
2115 GOSUB H
2125 PRINT C$
2130 PRINT "     KRAIG D. PRITTS -
 KA2LHO","   BOX 198",,"   LEONA
RDSVILLE, NY 13364","   MADISON
COUNTY - USA"
2145 IF INKEY$="P" THEN GOTO 400
0
2155 IF INKEY$="" THEN GOTO 2140
2160 IF X$="2" OR X$="2K" THEN R
UN 5005
3000 FOR X=C TO 15
3005 PRINT AT X,A;B$
3010 NEXT X
3015 GOTO 2000
4000 PRINT AT F,A;B$
4010 COPY
4015 GOTO 2135
5000 SAVE "QSL II"
5005 CLS
5010 PRINT "ENTER RAM AMOUNT IN
USE. (2K OR","16K)"
5015 INPUT X$
5020 CLS
5025 GOTO 2
```

INSTRUCTIONS FOR "QSL II"

*** KA2LHO HAM HELPER SERIES ***

BY

KRAIG D. PRITTS
KA2LHO

-12 QSL II (2K OR 16K)

LOAD QSL II. THIS IS A SELF-STARTING PROGRAM AND UPON A SUCCESSFUL LOAD THE SCREEN WILL ASK FOR THE AMOUNT OF RAM YOU ARE USING. UPON ENTRY OF YOUR ANSWER THE SCREEN WILL GO BLANK FOR ABOUT 90 SECONDS WHILE THE CALLSIGN IS BEING CONSTRUCTED.

THE NEXT STEP IS TO FILL IN THE CARD AS THE PROMPTS APPEAR ON THE SCREEN. UPON COMPLETION OF THE CARD PRESS P TO HAVE IT PRINTED. IF YOU WISH TO EDIT THE QSO INFORMATION, PRESS ANY KEY EXCEPT P OR BREAK. IF YOU ARE USING 2K OR RAM THE ENTIRE PROCESS WILL BE REPEATED. FOR 16K THE CALL WILL REMAIN AND ONLY THE CARD INFO WILL BE CLEAR OF THE SCREEN. TO COMPLETE AN ADDITIONAL CARD AFTER PRINTING, USE THE EDITING PROCEDURE DESCRIBED EARLIER.

IF YOU WISH TO CHANGE THE BIG CALLSIGN, THEN MAKE THE PROPER CHANGE ON LINE 1010. USE SPACES BEFORE THE CALL TO ADJUST ITS POSITION ACROSS THE CARD. YOU WILL ALSO WANT TO CHANGE THE INFORMATION IN LINE 2130.

I HOPE THAT YOU ARE ABLE TO MAKE USE OF THIS PROGRAM AND ENJOY ITS VERSATILITY.

73,

KRAIG D. PRITTS

SAMPLE PRINTOUT OF "QSL II"

KA2LHO

TO RADIO-KA2K

DATE-06/25/83 TIME-0009

BAND-15 MTRS MODE-SSB

RS(T)-59 WATTS-125

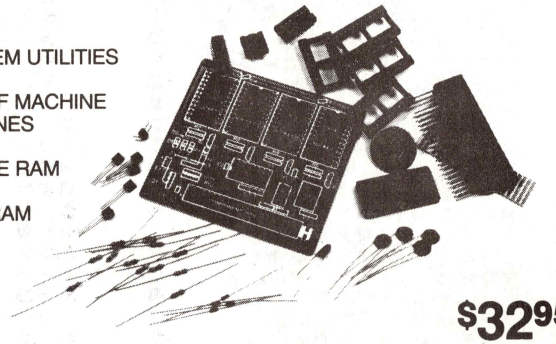
RIG-HW-101 ANT-MINI-QUAD

KRAIG D. PRITTS - KA2LHO
BOX 198
LEONARDSVILLE, NY 13364
MADISON COUNTY - USA

Extend your ZX81/TS1000/TS1500: Add Memory that won't Forget!

➧ *DESCRIBED IN* **Radio-Electronics**
JULY/AUGUST 1983

- ADD YOUR OWN SYSTEM UTILITIES
- BUILD UP A LIBRARY OF MACHINE LANGUAGE SUBROUTINES
- UP TO 8K NONVOLATILE RAM
- USE HM6116LP CMOS RAM OR 2716/2732 EPROM
- COMPATIBLE WITH 16K RAM PACKS



$32.95

plus $1.95 shipping and handling

➧ *READ THE REVIEWS:*

What a super product!...conceived and executed very nicely...and with quality components.
(SYNTAX QUARTERLY Winter 82)

8K Nonvolatile memory is a gem! It has so many possible uses...I recommend this board most heartily.
(OKLAHOMA S.U.G. Newsletter 1/3)

We found the documentation to be far superior to that (of) most hardware we've received.
(S.U.N. Newsletter Nov/Dec 82)

For versatility this is even better than an EPROM...ranks quite high on the list of "must-haves"...
(SYNC Magazine Mar/Apr 83)

Provides the user with instant software...an extremely versatile memory extension...
(Z-WEST June 83)

INTRODUCTION

This memory board is designed to fill the transparent 8K block of memory (from 8K to 16K) in a ZX81-16K system. This area of memory is an ideal place to store, either permanently or temporarily, machine language routines or data which are to be used by the BASIC system.

Sample utilities are included with the kit.

The use of HM6116LP 2K CMOS RAM memory IC's with their own reserve power supply means that routines stored in the RAM are nonvolatile — the RAM retains its memory even when the ZX81 is switched off or reset. Moreover, being RAM, the routines you store in the memory are easily modified. The lithium cell supplied with the board will maintain sufficient reserve power for almost ten years.

ASSEMBLY

Complete step-by-step instructions in a 20 page manual make assembly of the board easy. The kit (pictured above) is complete with a silkscreened solder-masked printed circuit board, all capacitors, resistors, transistors, sockets, connectors, integrated circuits, and the lithium cell. The board is supplied with one 2K CMOS 6116LP-3 RAM — it will accomodate three more for a total of 8K.

Complete kit with one 2K 6116LP-3	$32.95
Additional three 6116LP-3	$18.00
Bare pc board & manual	$13.05
Kit for EPROM use only	$22.95
Assembled & tested with 2K	$47.95
Assembled & tested with 8K	$65.95
Shipping & handling per order	$ 1.95

Send check or money order to the address below:

HUNTER, 1630 FOREST HILLS DRIVE, OKEMOS, MI 48864

TS-1500
ROM (CONTD)

Two procedural changes are introduced in initialization. First, because the TS1500 is configured with 16K RAM, there is no check of the amount of RAM. It is assumed to be 16K, and all 16K is cleared to zeroes. Second, in order to provide for cartridge power-up, the contents of memory location 2000h (8192 decimal) is checked.

If it contains a 1, then a jump is made to 8192:

```
03DA    LD HL, 2000h
        DEC (HL)
        JR NZ, 03E2h
        JP (HL)
03E2    ...
```

This latter process could be disasterous if you have RAM at 8192 and it contains a 1. On the other hand this is a handy way to bypass the system ROM at power-up.

Another possibly significant change is that memory locations 407B/C hex (16507 dec.), which used to contain zeroes (unused) are now loaded with the address of the front of BASIC (407Dh = 16509d)

Editor's Note: The above came from The Boston Computer Society Sinclair-Timex User Group Newsletter, to whom we are grateful. Maybe now I can figure out the problems I have been having with my new 1500. Those of you living near Boston should write them for membership details at Three Center Plaza, Boston, Mass. 02108

TS2068 Antenna Design Program
(Preview)
Terry Dalby, N8BIF

Terry said I was a bit hasty in my initial impression of the TS2068, so I am enclosing this preview of an article he is working on, to get even with him! Now he has to stay busy and finish it. I admit I was wrong about the 2068, everyone I have talked to loves theirs, and they are indeed selling well. Terry sent this preview, along with some rather nice comments about QZX, typed on his modified version of the TYPE program that was in QZX. He's also working on a TS2068 version of AF8J's RTTY program. Here are his comments:

I am including a sample print out of an antenna design program that I am working on. It is to show you how a novice at computer graphics can have some success. It is a menu driven program that will provide all dimensions and calculations for Quads, Yagis, Dipoles, Verticals and a couple of other types. I like to think that all of the formulas are not just close but are very accurate (I know they are for the quad section).

Resonant frequency-21.3 MHz

Side dimension	
Reflector and driven -	11' 7"
Each director -	11' 3"
Total loop length	
Reflector and driven -	46' 6"
Each director -	45' 0"
Spacing at .11λ	5' 7"
Reflector stub length	23"

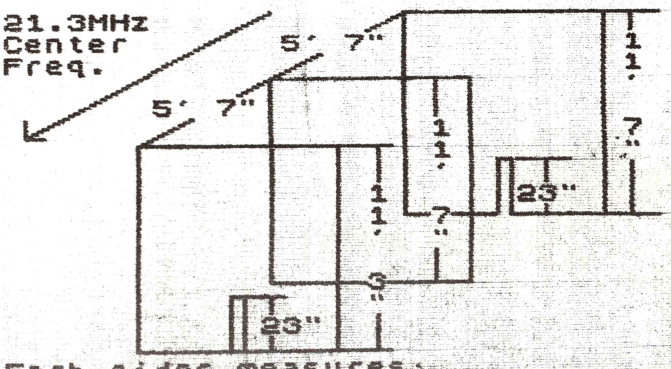
Remember that the stub width should be 3" for 30MHz and below 2" at 50MHz, and 1" above that. The width is [illegible] included.

The forward gain of a 2 element quad is about 7.3dB and for a 3 element quad it is 9.3dB.

The radiation angle with an Apex height at 35' is @ 15 deg.

[illegible] Adjust the stub on the reflectorfor a minimum S meter reading while the antenna is pointing away from a near by station.
Adjust the stubs on directors for maximum S meter reading while the antenna is pointed toward the local station.

The front to back ratio of a properly tuned quad is at least 25 dB. If you measure less, readjust the reflector.



Each sides measures:
ref. & driven - 11' 7"
Each director - 11' 3"

Spacing between elements - .11λ

Editor's Doings
Bo Barry, W4GHV

First, IF THERE ARE ANY ERRORS IN YOUR QZX EXPIRATION DATES, LET ME KNOW. We are going thru a transition period on our mailing labels programs and screw ups are likely! If you have not been contacted about 'payment' for articles submitted and printed in QZX thru the OCT 83 issue, LET ME KNOW. If you have sent money for back issues and have not received them, LET ME KNOW. My QZX 'stack' got a bit dis-organized, so please help me get all the unfinished business taken care of. Don't send NEW requests for back issues, we still don't have any. I don't have much to report this month, except that the January issue is DONE and February is almost done! I'll be back to my RTTY efforts soon! I would like to wish everyone the best in 1984, we have enjoyed your support and contributions to QZX in '83. New subscribers continue to roll in, but its up to the large numbers of 'charter members' to come to our rescue.

Products in Review

Here are a few comments from Larry, AF8J to update last month's review of the AF8J RTTY interface/program: Both the ASCII & RTTY modes have become one 2K program, written in machine language, and allows switching between modes. There is now a silk screened & tinned PC board available for the interface that can be made into a complete terminal unit. By adding an optional circuit you can key your transmitter from the ZX/TS keyboard. Program features include end of line look ahead, unshift on space, auto fig/ltrs, auto CR/LF, on screen mode reminder, and auto scroll. Due to the 2K restrictions, type ahead buffers were not possible, but this program runs on an unexpanded TS1000 and loads in just 33 seconds.

Next is a long overdue review of Scientific Software's Disassembler (see unclassified ad, this issue). Sent to me by Stephen V. Rowson, who admits to being an electrical engineer, but is NOT a ham; he said he found QZX to be interesting. Anyhow, I put the tape in my 'tape pile' and thought I had put the manual in the QZX 'pile' for later review. Well I looked and looked for the manual and finally gave up the search. Then one day recently when I was in the 'tape pile' I found the Disassembler tape, and INSIDE was the 'manual'! It turned out to be 5 miniature pages that fits inside the cassette case! It is plenty adequate, just hard to find in the QZX mess. Now for the details on Disassembler (ZXDIS). It is an easy-to-use utility which enables you to examine machine code programs (including the computer's ROM) as mnemonics rather than just sequences of numbers. (For those of you not addicted to machine language programming yet; you are missing out on an enjoyable addiction!) ZXDIS loads easily and then can be relocated anywhere in memory. It starts out at the bottom of user memory (hex 4082) but can be moved above RAMTOP, on into the area between 2000-3FFF if you have RAM there. If no relocation address is entered, it will relocate itself at the top of memory as defined by RAMTOP. This flexibility allows you to look at any machine language program, no matter where it loads in memory. Once it's 'up an runnin', it allows display of memory contents in either mnemonic or hex formats. You can go through a line at a time, a screen full at a time, or continuously through memory. A printer can be toggled on/off for a hard copy, if desired. Using Alex's Mindware printer, however, I found it couldn't keep up or wouldn't display correctly while in the continuous display mode. The full screen format worked fine. ZXDIS will also allow searching through memory for a specified two digit hex value. And here's perhaps the most useful feature: ZXDIS has a TAPE LOAD feature that will load 'auto run' or protected tapes, providing a normal stop when the tape is loaded. Bomber, my kids favorite game, (adults never play games) is protected and I was only able to make a backup copy using the Z-Dubber described in May '83 QZX. ZXDIS allowed backup of it easily and allows me to disassemble the program to learn some more programming tricks. Bomber is, by the way, a neat (simple-minded & frustrating) game, but don't try it just before going to bed. (You will be nervous, with bombs dropping instead of sheep jumping fences). In summary, I think the Scientific Software Disasemmbler is EXCELLENT. Now to get it put into PROMs for the Hunter Memory Board!

PUBLISHER'S NOTES

It was a relief to get the special RTTY issue out to you. A lot of effort went into that issue. There is, of course, a lot more to be said on that subject and we will say some of it in the future.

As everybody knows, Bo and I do not write these issues. We do not have the time even if we could. We are dependent on you to supply programs, reviews and hardware articles. Some of you really have come up with some good articles. Many of them, especially those by K5MIL, are submitted in excellent form all ready to go with very little effort on Bo's part. This is a very big help. We were able to offer a little token of appreciation to most of our writers. It almost goes without saying that both Bo and I know that without you QZX would quickly fold.

The big item this month is to note your subscription expiration date. This date will appear on you address label in coded form. Because our subscription list is still on two different computers, the codes are a bit different on different labels. You will have no difficulty telling the year. The other number in the code is the month that the subcription expires (not the issue number). If you subcription has expired, please renew at once. I am amazed at the number of people who have already renewed without any special notice; however, because the revived QZX started up again in December, a great many subscriptions expire now. If we could just get about 200 more instead of losing a few at this time, there are a few steps we could take to reduce the postage bill without giving up the advantages of first class mailing. If your records differ from ours, write immediately and we will adjust the records.

Ads are a big thing. They pay for the big issues like last month's; because the subscription rate just does not cover the increased postage, increased printing costs, and the other expenses which come with a large issue. It is difficult to interest large companies in a small journal, but we write to every company which sells items for our computers which we think hams would be interested in. They don't have too much money either, so they like to have proof that their ads have some effect. You can supply that proof by telling them that you noticed their ad in QZX.

Next month I will try to tell you a little more about the QZX subscribers. They are an interesting bunch alright. For now I will take a short break and try to learn a little more about my new T/S 2068.

UNCLASSIFIED ADS

WANTED: UNCLASSIFIED ADS for publication in QZX. Cost is 1 cent for each keystroke (characters, blanks, etc.). Payment must be included with order. This is an excellent way to sell your program or unwanted equipment, ask for help, or find a specific program. Send your ad with payment to QZX, 2025 O'Donnell, Las Cruces, NM 88001.

FOR SALE: TS1000 HAM HELPER PROGRAMS - Some written for county hunting and all are in BASIC for easy mods to suit individual taste. Write for details (SASE appreciated) to KA2LHO, Kraig D. Pritts, Box 198, Leonardsville, NY 13364 (see QZX for sample).

WANTED: ROM for ZX81. KZ4Z Dallas Swindal, 1112 San Jose Lane, Hanahan, SC 29406.

FOR SALE: Surplus keyboards suitable for T/S 1000. $30.00 including postage. Edge connectors. Saw ends off to make connector suitable for the back connections to the ZX81 and T/S computers. $2.50 including postage. Alex. F. Burr, 2025 O'Donnell, Las Cruces, NM 88001.

FOR SALE: TS1000/ZX81 disassembler - Easy to use utility loads anywhere in memory, provides disassembled listing or hexadecimal dump to screen or printer. Includes memory search & modify. Can load & stop any program for disassembly or backup. Occupies 3.5K. Cassette & instructions, $14.95 ppd. Scientific Software, 6 W. 61 Terrace, Kansas City, MO 64113.

HAWG WILD SOFTWARE

Alex Burr K5XY

HAWG WILD Software, Box 7668, Little Rock, AR 72217, has a number of programs for the Timex/Sinclair computers of particular interest ot hams.

One of these is a very nice code practice program written by KC9MR. This program comes in two versions on a high quality cassette. One version requires 16K of RAM while the other shortened version only requires 2K. Both versions appear on both sides of the tape and are accompanied by a short three page instruction leaflet.

The programs are very useful, flexible, and convenient to use. They could also be used to give the code test now that the volunteer examiner program is starting to take shape.

The 16K version displays a menu as soon as it is loaded. That menu offers you three choices:

A- WRITE A MESSAGE
B- RANDOM CODE
C- SEND CODE
D- DISPLAY CODE
E- SAVE CODE

The choices are almost self-explainatory, but the details show that the program was written by a person that both knew how to teach code and who knew the computers he was writing for.

WRITE A MESSAGE alows you to do just that. You can enter anything you wish and the program will use what you have written for the practice text.

RANDOM CODE provides just that. But with more choices. You can select various combinations of letters , punctuation, and numbers or you can create your own subgroup to practice on. You can even enter some letter more than once to weight them more heavily in your practice. The program will generate the code in groups of random length, a nice feature because hams do not converse in 5 letter groups.

SEND CODE alows you great lattitude in selecting how the code is to be sent. You can select the character speed and the letter speed independently of each other, a feature which seems to me to be essential to beginners. The program even provides here a mechanism for you to tune your television montior so that you can hear the code from your set.

DISPLAY MESSAGE places what has just been sent on the screen so you can check you copy.

SAVE ON TAPE permits one to prepare tapes for code practice for use when the computer is not available.

The shorter 2K program does not have all these features but some of them are available if you polk numbers given in the instructions to certain memory locations.

All programs can be inproved and this one is no exception. The main improvement I would make is to provide an adjustable tone. However, if you or your club need a code practice program this one will certainly fill the bill.

QZX FRIENDS

KD6TO -- David has renewed and says that he is building an AF8J RTTY system with a Computer Continuum expansion board.

W4MHQ -- Josh has plans to use the ZX81 as a repeater controller, a very good idea.

WA6DLI -- Bob has once again sent us some information on the peripherals being produced in Great Britain for the Spectrum. This time he tells of the endless loop tape used for quick mass storage with its RS232 interface.

Bill Messina from Florida tells us that he has upgraded his T/S1000 with a full size keyboard and 32K of RAM

KD5DL -- Holly is off to QKinawa and is taking the NU4V CW program along.

WA0MRG -- Dallas is trying to figure out how he is to get the high RTTY tones through his SSB rig without major modifications.

WA2QKF -- Ronald just renewed and says that he has gotten a new T/S 2068. He says that as a pro working on an IBM 8083 system he thinks the new T/S is the best home p/c for the money around.

73, W4GHV and K5XY

QZX presents the best software and hardware projects available for the radio amateur. While the contents are believed to be accurate, no warranty is extended on any program or project. No investigation has been made of the claims or reputation of any advertiser. It would be greatly appreciated if all correspondance requiring an answer would be accompanied by a self stamped envelope (SASE). Copyright by QZX, 1983. All rights reserved, Photocopying by permission only.

```
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*starting immediately. Enclosed is     *
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* not in Canada, the U.S, or Mexico    *
* send $19.00 in U.S. funds for        *
* air mail delivery. Thanks    (12/83)*
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*                                      *
*  Call .............................. *
*                                      *
*  Address ........................... *
*                                      *
*  City .............................. *
*                                      *
* State..... ZIP.....                  *
****************************************
```

QZX
2025 O'Donnell Dr.
Las Cruces, N.M. 88001

Tom Arbster ***** =03/84
Box 477
Bethany, Okla. 73008